WE CLAIM:

-1-

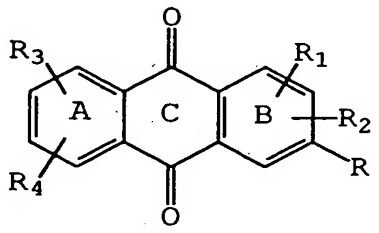
A method for inhibiting a parasitic helminth which comprises:

exposing the helminth to an inhibitory amount of an anthraquinone.

-2-

A method of inhibiting a parasitic helminth, which comprises:

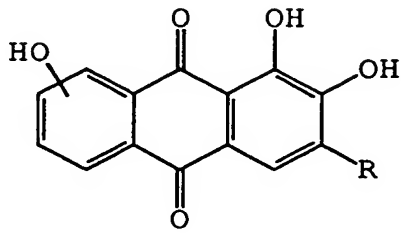
exposing the helminth to an antihelminthic amount of at least one anthraquinone of the formula:



wherein R_1, R_2, R_3, and R_4 are each selected from the group consisting of hydrogen, hydroxy, halogen, alkyl, substituted alkyl, alkene, substituted alkene, alkyne, aryl, substituted aryl, cyclic, substituted cyclic, acid group, carbohydrate, and combinations thereof, R is a group containing 1 to 12 carbons selected from the group consisting of methyl, alkyl, substituted alkyl, aldehyde, hydroxy, hydroxymethyl, acid group, carbohydrate, and combinations thereof, and the halogen is selected from the group consisting of I, F, Br, and Cl.

-3-

The method of Claim 2 wherein the anthraquinone has the formula:



wherein R is a group containing 1 to 12 carbons selected from the group consisting of methyl, alkyl, substituted alkyl, aldehyde, hydroxy, hydroxymethyl, acid group, carbohydrate, and combinations thereof.

-4-

The method of Claim 1 or 2 wherein the anthraquinone is 1,2,8-trihydroxy-3-methyl anthraquinone.

-5-

The method of Claim 1 or 2 wherein the anthraquinone is 1,2,8-trihydroxy-3-hydroxymethyl anthraquinone.

-6-

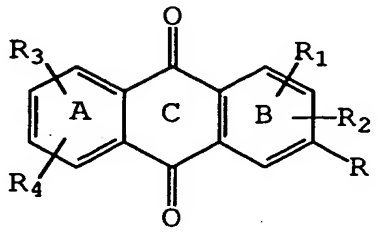
The method of Claim 1 or 2 wherein the inhibition is *in vitro*.

-7-

The method of Claim 1 or 2 wherein the inhibition is *in vivo*.

A method of inhibiting a *Schistosoma* sp. which comprises:

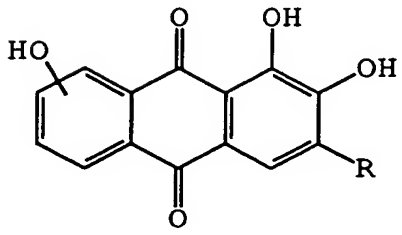
exposing the *Schistosoma* sp. to an inhibitory amount of at least one anthraquinone of the formula:



wherein R_1, R_2, R_3, and R_4 are each selected from the group consisting of hydrogen, hydroxy, halogen, alkyl, substituted alkyl, alkene, substituted alkene, alkyne, aryl, substituted aryl, cyclic, substituted cyclic, acid group, carbohydrate, and combinations thereof, R is a group containing 1 to 12 carbons selected from the group consisting of methyl, alkyl, substituted alkyl, aldehyde, hydroxy, hydroxymethyl, acid group, carbohydrate, and combinations thereof, and the halogen is selected from the group consisting of I, F, Br, and Cl.

-9-

The method of Claim 8 wherein the anthraquinone has the formula:



wherein R is a group containing 1 to 12 carbons selected from the group consisting of methyl, alkyl, substituted alkyl, aldehyde, hydroxy, hydroxymethyl, acid group, carbohydrate, and combinations thereof.

-10-

The method of Claim 8 wherein the anthraquinone is 1,2,8-trihydroxy-3-methyl anthraquinone.

-11-

The method of Claim 8 wherein the anthraquinone is 1,2,8-trihydroxy-3-hydroxymethyl anthraquinone.

-12-

The method of Claim 8 wherein the anthraquinone is inhibitory at a dosage of 1 to 1,000 micrograms per milliliter or gram.

-13-

The method of Claim 8 wherein the inhibition is *in vitro*.

-14-

The method of Claim 8 wherein the inhibition is *in vivo*.

-15-

A method for inhibiting a pathogenic trematode in a warm-blooded animal or human infected with the pathogenic trematode comprising:

(a) providing a composition containing an inhibitory amount of at least one anthraquinone selected from the group consisting of 1,2,8-trihydroxy-3-methyl anthraquinone (compound **3**) and 1,2,8-trihydroxy-3-hydroxymethyl anthraquinone (compound **6**) in a pharmaceutically acceptable carrier; and

(b) and administering the composition to the warm-blooded animal or human to inhibit the pathogenic trematode.

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The method of Claim 15 wherein the anthraquinone is inhibitory at a dosage of 1 to 1,000 micrograms per milliliter or gram.

-17-

The method of Claim 15 wherein the anthraquinone is administered to the warm-blooded animal or human orally, subcutaneously, intraperitoneally, intravenously, topically, intranasally, or rectally.

-18-

A method for inhibiting a pathogenic trematode in a warm-blooded animal or human infected with the pathogenic trematode comprising:

(a) providing a composition containing an inhibitory amount of 1,2,8-trihydroxy-3-methyl-*O*-β-D-glucopyranoside anthraquinone (compound **7**) and at least one anthraquinone selected from the group consisting of 1,8-dihydroxy-2-*O*-β-D-glucopyranoside anthraquinone (compound **4**) and 1,8-dihydroxy-2-*O*-malonyl-(1-6)-β-D-glucopyranoside anthraquinone (compound **5**) in a pharmaceutically acceptable carrier; and

(b) and administering the composition to the warm-blooded animal or human to inhibit the pathogenic trematode.

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The method of Claim 18 wherein the composition further includes an inhibitory amount of at least one anthraquinone selected from the group consisting of 1,2,8-trihydroxy-3-methyl anthraquinone (compound **3**) and 1,2,8-trihydroxy-3-hydroxymethyl anthraquinone (compound **6**).

-20-

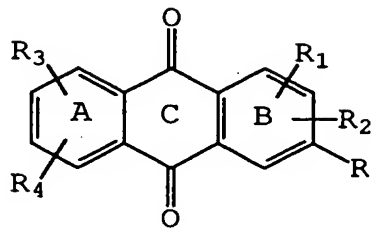
The method of Claim 18 wherein the anthraquinone is inhibitory at a dosage of 1 to 1,000 micrograms per milliliter or gram.

-21-

The method of Claim 18 wherein the anthraquinone is administered to the warm-blooded animal or human orally, subcutaneously, intraperitoneally, intravenously, topically, intranasally, or rectally.

An antihelminthic composition which comprises:

(a) at least one anthraquinone of the formula:

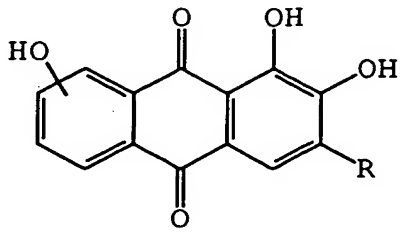


wherein R_1, R_2, R_3, and R_4 are each selected from the group consisting of hydrogen, hydroxy, halogen, alkyl, substituted alkyl, alkene, substituted alkene, alkyne, aryl, substituted aryl, cyclic, substituted cyclic, acid group, carbohydrate, and combinations thereof, R is a group containing 1 to 12 carbons selected from the group consisting of methyl, alkyl, substituted alkyl, aldehyde, hydroxy, hydroxymethyl, acid group, carbohydrate, and combinations thereof, and the halogen is selected from the group consisting of I, F, Br, and Cl; and

(b) a pharmaceutically acceptable carrier, wherein the composition contains between about 1 and 1,000 micrograms of the anthraquinone per milliliter or gram of the carrier.

-23-

The antihelminthic composition of Claim 22 wherein the anthraquinone has the formula:



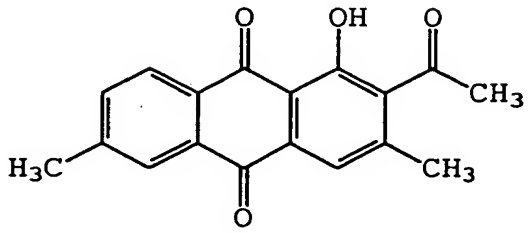
wherein R is a group containing 1 to 12 carbons selected from the group consisting of methyl, alkyl, substituted alkyl, aldehyde, hydroxy, hydroxymethyl, acid group, carbohydrate, and combinations thereof .

-24-

The antihelminthic composition of Claim 22 wherein the anthraquinone is selected from the group consisting of 1-hydroxy-2-acetyl-3,6-methyl anthraquinone (compound **1**), 2-acetyl-3,6-methyl anthraquinone monoacetate (compound **1a**), 1-hydroxy-2-acetyl-3,7-methyl anthraquinone (compound **2**), 2-acetyl-3,7-methyl anthraquinone monoacetate (compound **2a**), 1,2,8-trihydroxy-3-methyl anthraquinone (compound **3**), 1,8-dihydroxy-2-*O*-β-D-glucopyranoside anthraquinone (compound **4**), 1,2,8-trihydroxy-3-hydroxymethyl anthraquinone (compound **6**), and 1,8-dihydroxy-3-carboxy anthraquinone (compound **8**).

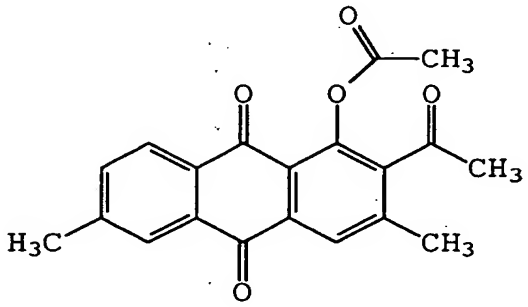
-25-

An isolated and purified anthraquinone which has the formula:



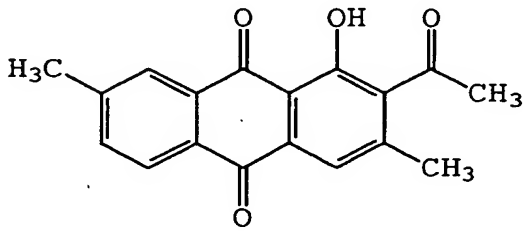
-26-

An isolated and purified anthraquinone which has the formula:



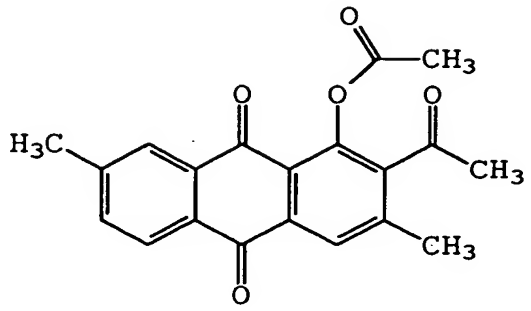
-27-

An isolated and purified anthraquinone which has the formula:



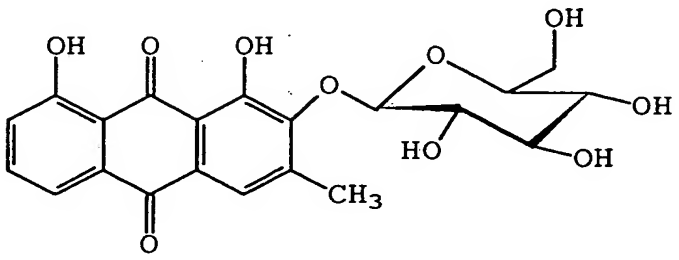
-28-

An isolated and purified anthraquinone which has the formula:



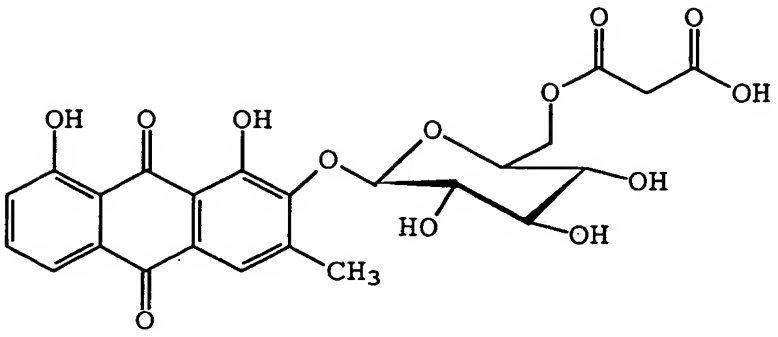
-29-

An isolated and purified anthraquinone which has the formula:



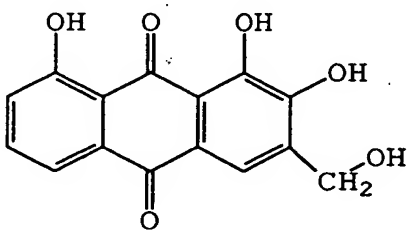
-30-

An isolated and purified anthraquinone which has the formula:



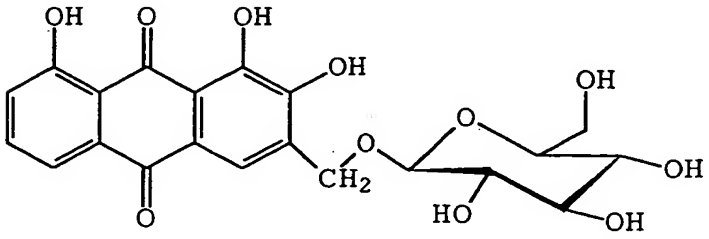
-31-

An isolated and purified anthraquinone which has the formula:



-32-

An isolated and purified anthraquinone which has the formula:



An isolated and purified anthraquinone which has the formula: